



VOLUME 6 • NUMBER 1 • 2012-2013



ECHOES



MONTEZUMA WELL • MONTEZUMA CASTLE NATIONAL MONUMENT • TUZIGOOT NATIONAL MONUMENT

Welcome to the Verde Valley Monuments

The Verde Valley, lying under the spectacular pine-clad cliffs of the Mogollon Rim of central Arizona, forms an immense biological transition between desert, grassland, and forest vegetation zones.

As the seasons change, this endangered riparian habitat of the Verde River serves as a migration corridor for many animals (through land and air). But for thousands of years, the Verde Valley was also a haven for the movement of people, providing the food and water all life needs for survival.

The national monuments of the Verde Valley—Montezuma Castle, Montezuma Well, and Tuzigoot—protect and interpret the legacy of the Sinagua culture, Native people who flourished here for centuries, long before Columbus claimed to have discovered this New World.

Montezuma Castle has been described as the best preserved and most dramatic cliff dwelling in the United States. Montezuma Well is a natural limestone sinkhole with prehistoric sites and several animal species found nowhere else in the world. Tuzigoot is the remains of a 110-room pueblo perched on a high ridge with a panoramic view of the Verde River and surrounding marshlands.

Although many of today's visitors marvel at the well-preserved Sinagua dwellings, remember to allow some time to experience the oasis of the riparian area as it supports a wide variety of fauna and flora. As the seasons change, we invite you to ENJOY!

As Chief Seattle provided, "take only memories, and leave nothing but footprints." We look forward to your next visit!

— Dorothy FireCloud, Superintendent

Echoes from the Past

DISCOVERING THE 10,000 YEAR LEGACY OF PEOPLE IN THE VERDE VALLEY

A visit to Montezuma Castle National Monument, Montezuma Well, and Tuzigoot National Monument provokes many questions. Why did prehistoric Native Americans choose to live here? Where did they go? And, perhaps most importantly, how did they live in this land of seemingly harsh contrasts: hot and arid in the summer, cool in the winter?

Humankind has lived here for thousands of years. Early Archaic peoples left their mark in the

form of scratched designs and pictographs up to 9,000 years ago. The Sinagua farmed and traded here successfully from around 600 to 1425. More recently, the Yavapai and Apache have thrived by hunting and gathering. The Verde Valley may look like a desert, harsh and impossible to live in, but to those who know how, it is a proverbial breadbasket of bounty.

Echoes is your guide to the National Monuments of the Verde Valley, as well as Native American cultures who lived here. There is much to explore. Throughout and between Camp Verde, Rimrock, Clarkdale, and Sedona, you will find echoes from the past, resonating from places and people whose roots reach far beyond history. ♥

By Case Griffing
National Park Service

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GENERAL INFORMATION



National Park Service
U.S. Department of the Interior

Montezuma Castle & Tuzigoot National Monuments

Superintendent

Dorothy FireCloud

Mailing Address

P.O. Box 219
Camp Verde, AZ 86322

Website

www.nps.gov/moca
www.nps.gov/tuzi

Park Headquarters

ph: (928) 567-5276
fax: (928) 567-3597

Email

moca_ranger_activities@nps.gov

Montezuma Castle

2800 Montezuma Castle Rd.
Camp Verde, AZ 86322
(928) 567-3322

Montezuma Well

5525 Beaver Creek Rd.
Rimrock, AZ 86335
(928) 567-4521

Tuzigoot

25 W. Tuzigoot Rd.
Clarkdale, AZ 86324
(928) 634-5564

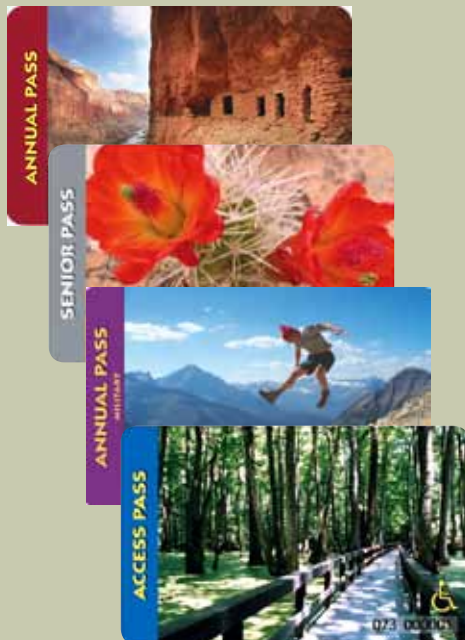
Hours of Operation (Closed Christmas Day)

Year-Round: Daily 8 a.m. to 5 p.m.

Park Entrance Fees and Passes

Daily Entrance Fees for Montezuma Castle or Tuzigoot:

\$5 per adult (16 & over) Children FREE (under 16)



INTERAGENCY ANNUAL PASS: \$80

Grants access to all federal fee areas in the U.S. (with some exceptions), including all national parks and monuments, for twelve months from date of purchase.

INTERAGENCY SENIOR PASS: \$10

A one-time fee grants access to all federal fee areas in the U.S. (with some exceptions). For U.S. citizens or permanent residents 62 years of age or older.

INTERAGENCY MILITARY PASS: FREE

Grants access to all federal fee areas in the United States (with some exceptions) for *active duty* U.S. military personnel and their dependents.

INTERAGENCY ACCESS PASS: FREE

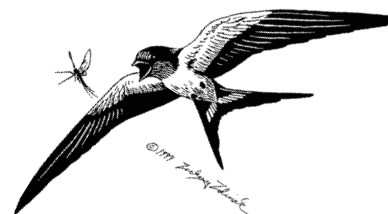
Grants access to all federal fee areas in the U.S. (with some exceptions) for permanently disabled U.S. citizens or permanent residents.

Protect your Monuments

- The arid desert landscape is very fragile, and wildfires are a real danger. Smoking is permitted in designated areas only.
- All the monuments are protecting archeological sites, as well as natural resources. It is against the law to tamper with, deface or remove any artifact, plant, rock, or other natural feature of the park.
- Hiking off the trails can damage the soil crust—a living groundcover of lichens, mosses, and other organisms.
- Off-road parking or driving is prohibited.
- Please help with trash removal and use the waste receptacles. We have an active recycling program for aluminum cans and plastic bottles, with designated brown receptacles.
- Camping is prohibited in all areas of the monuments.
- Bicycles, skateboards, and any motorized vehicle other than wheelchairs are not permitted on the trails.
- Gas stoves are permitted only at the Montezuma Well picnic area. No ash-producing fires are allowed in the monuments.

Protect Yourself

- Remember to drink lots of water, use sunscreen, and wear a hat! If you feel thirsty, you are already on the way to being dehydrated. Be prepared with appropriate footwear and clothing for temperatures that can exceed 100°F (38°C) in the summer and fall below freezing in the winter.
- Please stay on the trails. Rattlesnakes live here, though they are rarely seen.
- Handrails are there for your safety; please do not go past them. Rock surfaces can be slippery; please stay away from any cliff edge.
- Pets on a short leash are allowed on the trails but must be carried into visitor centers. Do not leave pets in a vehicle during warm weather. Please clean up after your pet.



Ranger Programs

- Ranger programs are offered at least twice daily at Montezuma Castle and as staffing allows at both Tuzigoot and Montezuma Well. These programs range in length from 20 minutes to an hour and cover topics including archeology, Sinagua culture, and the geology and biology of the Verde Valley. Ask a ranger or docent at the visitor center for program times and locations.
- Education programs and classroom presentation are available to local and visiting school groups. Call Ranger Case Griffing at (928) 567-3322 x230, or e-mail (case_griffing@nps.gov) for more information and scheduling.

Accessibility

- The national parks and monuments are areas of great beauty and significance, set aside for all to enjoy. Ask a ranger if there are any questions or concerns about accessibility. Audio cassettes and text in Braille are available. More details about trails and visitor centers are available under individual monument descriptions.

Volunteers

- Our volunteers are priceless! The National Park Service's Volunteers-In-Parks program gives the public an opportunity to share knowledge and experience. Call (928) 567-3322 x230.

"Echoes" is provided by:

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P.O. Box 219, Camp Verde, AZ 86322

Editor: Case Griffing

Design & Production: Amanda Summers
Design, Case Griffing, Anne Worthington,
Joshua Boles, and Paul Ollig

Contributors and Advisors: Dorothy FireCloud, Kathy Davis, Sherry Wood, Ed Cummins, Karen Hughes, John Reid, Rex Vanderford, Jon Fistler, Skip Larson, Penny Wagner, Anne Worthington, Ryeon Corsi, Ryan Isaac, Deb DeCovis, Sharon Kim, Matt Guebard, Melissa Philibeck, and Dennis Casper

Masthead art © 2004

Montezuma Castle National Monument

VALLEY OF THE SINAGUA

Montezuma Castle, Montezuma Well, and Tuzigoot are just three neighborhoods in a valley filled with over forty major prehistoric pueblos—and dozens of smaller sites.

The monuments of the Verde Valley are spectacular. Montezuma Castle has been called the best preserved example of Native American architecture in the Southwest. Tuzigoot is so exemplary of its time period that its era is known as the Tuzigoot Phase of the Sinagua culture. To this day, Montezuma Well has ceremonial importance to at least four modern tribes.

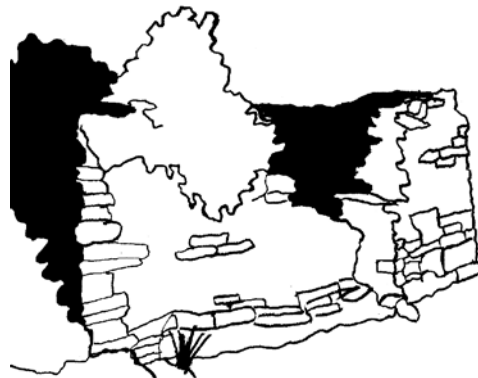
But these sites are just three pieces of a much larger, fuller picture. From 600 to 1425 CE, the Verde Valley was home to 6,000–8,000 people. Early on, they began with dozens of scattered, one- and two-room buildings. These were sometimes clustered into small groupings called hamlets. By the time the Sinagua left this valley, they had built not just

three, but more than forty major pueblos on the landscape.

The culture we call Sinagua existed here for more than 800 years. That's more than *three times longer* than the United States has been a country! Over that period every hill, every basin, every marsh, stream, and peak, must have become the site of a home, encampment, or some important event.

The Verde Valley is filled with ancient history. Spend some time here, and you will discover ancient buildings at the ends of trails, rock walls filled with a thousand petroglyphs, and a silent story at every turn. ♥

By Case Griffing
National Park Service

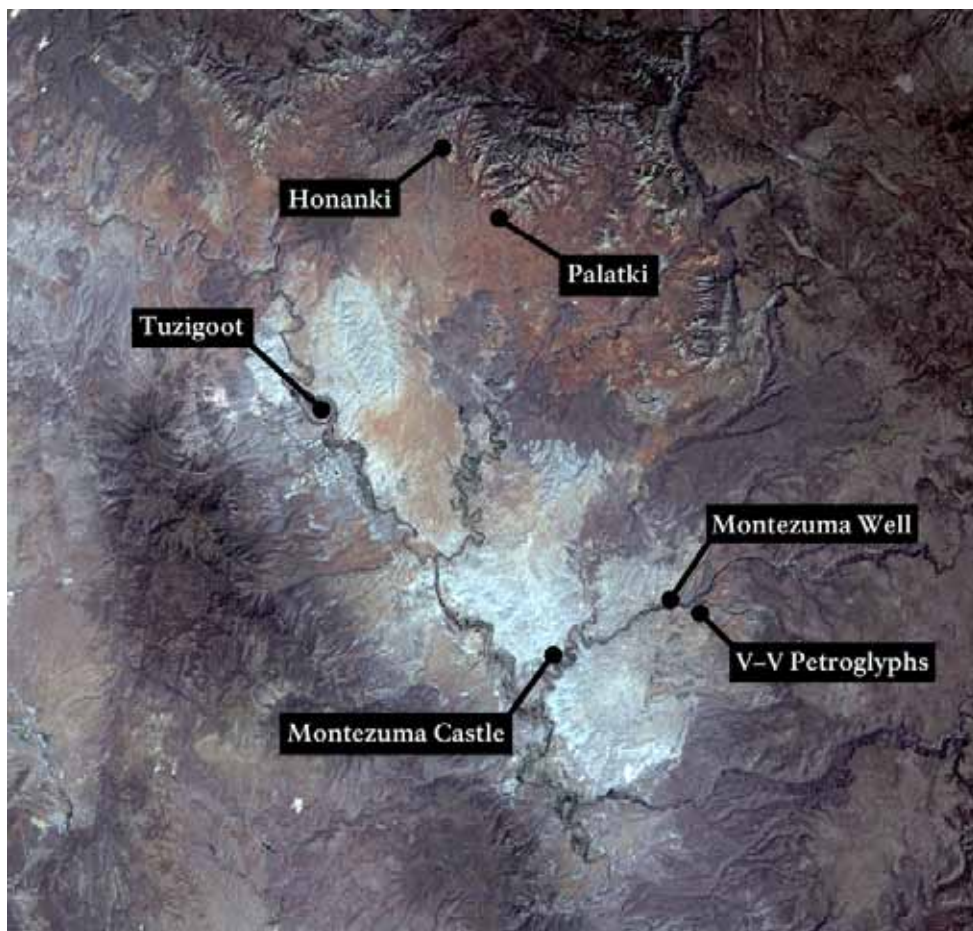


Montezuma Castle, Montezuma Well, and Tuzigoot aren't just for grown-ups. A long time ago, kids lived here, too!

Kids
Corner

Look for the orange Kids Corner boxes throughout this newspaper to learn what it might have been like to be a kid here a thousand years ago.

Also, don't forget to ask a park ranger for a free Junior Ranger activity book. Finish the activities and earn an honorary Junior Ranger badge!



Several Southern Sinagua sites are open for visitors to explore. Ask a park ranger for more information about Montezuma Castle, Montezuma Well, and Tuzigoot. To learn more about Honanki, Palatki, and V-Bar-V, contact the U.S. Forest Service at (928) 282-3854.

Visit with Respect

"Where the people stopped and built their homes are all sacred places." Zuni tribal member

Many first-time visitors to the Southwest get their first introduction to Native American prehistory and culture at Montezuma Castle and the Verde Valley, as they drive north from Phoenix on their way to Sedona and the Grand Canyon.

It can feel overwhelming to stand before a structure that was built and occupied 700–1000 years ago. At Montezuma Castle and Tuzigoot, Walnut Canyon and Wupatki, the Grand Canyon and beyond, one can visit and explore places where entire generations were born, lived, farmed, ate, laughed, and slept.

When visiting Native American sites of the Southwest, please remember that these are not just vacation destinations. Some may be national monuments, national parks, and national heritage sites, but they are also locations of great importance and reverence to the descendants of those who lived in them. Even today, after all this time, these places are sacred.

At each site, please ask about and observe the rules for entering or not entering structures. If you find pottery, stone points, or other artifacts, leave them exactly as they are—they belong to the people who left them there. And if you observe someone removing artifacts or harming a site, please report it immediately to a park ranger or other law enforcement officer. ♥

By Case Griffing
National Park Service



MONTEZUMA CASTLE

Echoes of life

Montezuma Castle is just one building of what was once a thriving, successful neighborhood.

As you walk the path toward Montezuma Castle, you will likely hear the voices and laughter of other visitors. These sounds of life are not all that different from those that echoed from these cliffs in prehistoric times.

Although Montezuma Castle is the showpiece of the monument, it is not the only building here. Once upon a time, its 20 rooms stood alongside more than 65 others in Castle A and along the cliffs. Between 85 and 90 rooms total housed a community of perhaps 150 people.

What might it have been like to live here? The Sinagua left us no diaries, so we may never know for sure, but we can speculate.

As the day begins, a family shares a single room. It is probably dark, even if the sun is up—doors and windows are small to keep heat inside during the chilly desert night. The fire has burned down to embers in its tiny, circular depression in the floor. There is little furniture: mats and blankets for sleeping, clay pots for storage, and supplies for work, crafts, and daily living.

A day's tasks probably depended on gender, clan, age, and station. Some people were responsible for farming. The land where the trail is today was once occupied by stalks of corn, vines of beans and squash, and bushes bursting with cotton. Beaver Creek, just a short walk from the base of the cliffs, provided water year-round.

Men may have been responsible for weaving. The cotton they grew was turned into some of the finest cloth in the entire Southwest, and yucca fibers became sandals and mats. Other individuals made jewelry. These crafts, along with salt collected from a nearby mine, were traded with people from other tribes, who arrived here after walking hundreds of miles along rivers and creeks from the outlying deserts and high country.

The women of these communities had jobs, too. Indeed, it's possible the entire society was matrilineal, with clan lineage traced through female ancestry. They made pottery used for storing food. Probably, they layered plaster on the walls, sealing out insects and protecting the masonry.

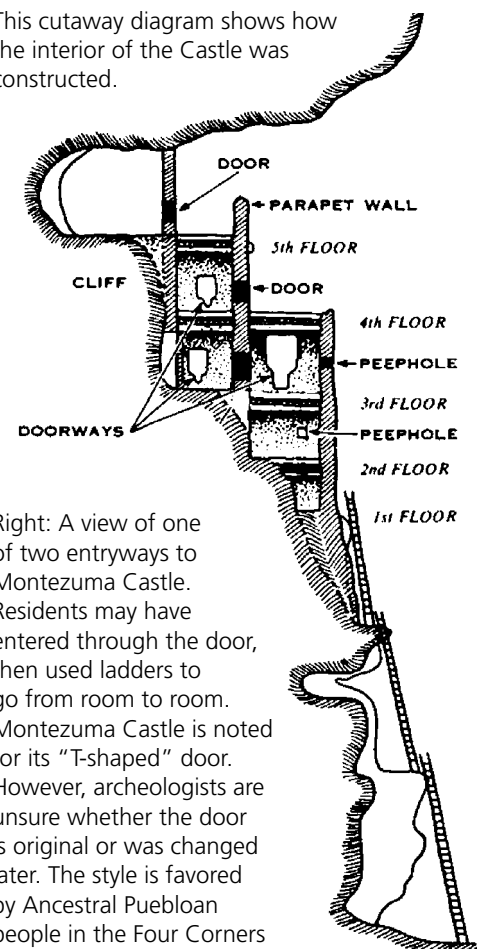
It is not difficult to imagine the sounds of children in these homes, either, born in the small rooms and growing up beside the cliff walls. As they prepared to enter adolescence, they may have been inducted into the clans of their families, helping define their responsibilities within society.

As each day ended, maybe there was music. They undoubtedly looked up at the same stars we gaze at today, observing the progression of their own constellations with the turning of each season. Fires lit inside kept the rooms warm for another night, their glow filling the small windows and doors overlooking the darkened fields. ♡

Do you have chores at home? Inside Montezuma Castle there are hundreds of small handprints all over the wall, where people who lived there put up plaster to make their home look nice and protect the stonework. Because the prints are so small, archeologists think the job was done by women and children!

Look inside the Montezuma Castle museum to find a casting of the handprints. How does the size of your hand compare?

This cutaway diagram shows how the interior of the Castle was constructed.



Right: A view of one of two entryways to Montezuma Castle. Residents may have entered through the door, then used ladders to go from room to room. Montezuma Castle is noted for its "T-shaped" door. However, archeologists are unsure whether the door is original or was changed later. The style is favored by Ancestral Puebloan people in the Four Corners area but not found in central Arizona.

They did not disappear

The people of Montezuma Castle and the Verde Valley still live nearby today.

For decades, national park rangers mistakenly told visitors that the prehistoric people of the Southwest mysteriously disappeared sometime around 1400. Places like Montezuma Castle, Tuzigoot, Mesa Verde, Chaco Canyon and others all thrived for hundreds of years, rangers said, and then the people who lived there just... vanished!

Today, we know better, but old stories die hard. In fact, the people who lived here simply moved.

Around the late 1300s, big changes began to happen in the societal structure of the Southwest. Archeologists are still trying to understand the details, but we do know that population centers began to shift.

At Montezuma Castle, Montezuma Well, Tuzigoot, and other Sinagua villages in the Verde Valley, people left in small groups—perhaps just a couple of families or part of a clan at a time. There was no single date on which everyone left *en masse*, nor did they all go the same direction. Eventually, though, many joined together to become the modern Hopi and Zuni tribes.

Others stayed behind but turned to hunting and gathering rather than farming. They became the ancestors of today's Yavapai people. This more mobile way of living, based on following the movements of wild game, also meant leaving the stone and mortar villages.

By 1425, Montezuma Castle and Tuzigoot and other villages throughout the valley were no longer occupied. However, the people did not disappear. Their descendants still live nearby, and they still return periodically to these villages built by the people of long ago. ♡

By Case Griffing
National Park Service



MONTEZUMA WELL

Point of Origin

Montezuma Well is an oasis in the desert, a habitat for five species that live nowhere else on earth, and the place of emergence for local Native American peoples.

Montezuma Well is one of the hidden jewels of the Verde Valley. Often missed by visitors unaware of its beauty, it is one of the most unique places in the world—and it's free.

Until 2011, no one was sure where the Well's water came from. Every day, more than 1.5 million gallons (5.7 million liters) of water spring from two powerful vents over 120 feet (36.6 meters) beneath the surface. This water fell as rain atop the nearby Mogollon Rim between 10,000 and 13,000 years ago. It has slowly percolated down through hundreds of yards of rock, then seeped through porous Redwall Limestone until reaching the Well. Once here, an impenetrable wall of volcanic rock forces the water back to the surface where we see it today after more than ten millennia.

The science of how the water got here may or may not be as impressive as the life that has evolved in it since. Because of the limestone the water had to flow through, it is saturated with carbon dioxide. There is so much carbon dioxide, in fact, that fish can't breathe here. There are no fish in the Well! Instead, Montezuma Well is home to five species of life that live nowhere else on planet Earth—a water scorpion, an amphipod, a leech, a snail, and a diatom.

Though it may look peaceful from the rim, there's a lot of drama happening beneath the water's surface. Amphipods,

which look like tiny shrimp, provide the basis of the Well's food chain. Every morning, they sink beneath the water's surface—but not too deep! A little further down, predatory leeches are lurking, hiding from the baking rays of Arizona's sun.

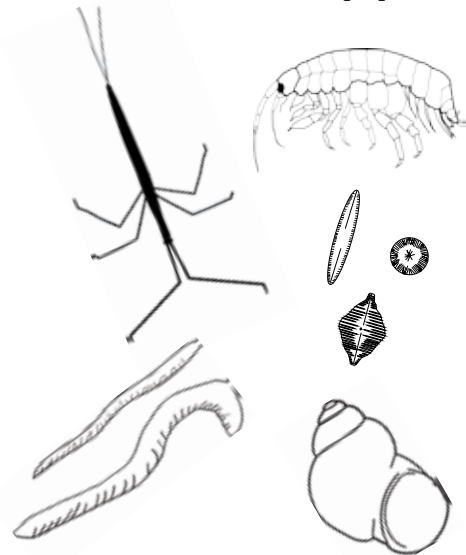
As night falls, the leeches rise, forcing the amphipods to flee toward the surface. But there, water scorpions and other insects are waiting for an amphipod feast of their own. Sneaking into the pondweed lining the Well's edge, the amphipods sit as still as they can through the night, hoping not to attract attention from their many predators. The next morning, when the sun finally peaks above the horizon, the leeches are forced to

sink once more. The amphipods return to the relative safety of deeper waters, starting the daily cycle all over again.

Humans have long lived at the Well, too. After all, there are 15 million gallons of water (57 million liters) here—in the middle of a desert! The earliest dwellings excavated here date back to approximately 1050, around the same time that early occupants channeled Montezuma Well's water into an irrigation canal for their farms. The monument and its neighbors still use that same canal today. Cliff dwellings and collapsed pueblos line the Well's rims, overlooking the ancient lake on one side and the shady, riparian paradise of Wet Beaver Creek on the other.

For many tribes, Montezuma Well is still a place of great power, even today. The Hopi tell us that their ancestors built the Well's pueblos. Yavapai and Apache histories say that this is where their people entered this world—their own point of origin. ♥

By Case Griffing
National Park Service



TUZIGOOT

Dawn comes easily to the world, touching upon the mountain ridges and then illuminating down into the valleys. As the light comes to this hill above the river, the old walls reflect again a memory of life uncovered from time’s dust.



Archeologists with a Civil Works Administration crew excavated and stabilized the ancestral village now known as Tuzigoot in 1933 and built a museum to hold its material story in 1935.

Our present understanding is of hunters passing through this abundant valley perhaps 10,000 years ago, followed before 1100 C.E. by farming peoples who built their way of life on the available resources of land and water.

Although the last word is yet to be written on the goings and comings of these people, we know from our scientific inquiries some clues about the climate of the times. Rainfall is sometimes marginal; the crops may have depleted the soil nutrients after years of planting.

By the time the people of Tuzigoot left the region around 1400 C.E., the citadel had housed perhaps 250 people in its 110 rooms. It was the city of its day, where people learned to resolve the problems of living life together. And though with more people came more problems, there were also more of the same people to find solutions. There is a creative

chain of choices and survival threading through the generations that lived here.

How big was the world they called their own? By the stories of people and artifacts, we know the Sinagua traded for shells from the coast and macaws from the south.

Where did they go? Depending on our use of the language, “vanished” may come to mean they moved on to other resources and other promised lands. The Hopi people of today tell, in their clan stories, of living in places like this before migrating to their present northern mesas.

Why did they leave? Perhaps resources became too few and politics too much—or perhaps the Promised Land lay just beyond the horizon.

Enjoy your visit to Tuzigoot, and look past the ruins to a time when the best world was on top of a hill made golden by dawn’s light.

By John Reid
National Park Service

How do you say Tuzigoot?

Tuzigoot isn’t as hard to say as it looks. Most rangers just say:

TOO-zee-goot

The name comes from the Western Apache who pronounce it TOO see-WHOODT, meaning “crooked water.” It is a reference

to a major bend in the nearby Verde River.

We don’t know what Tuzigoot’s original occupants called this village. However, some of their modern descendants among the Hopi call it *Tsor’ovi*—the Place of the Bluebird.

Tavasci Marsh: Relic of an Ancient World

Tuzigoot National Monument overlooks Tavasci Marsh, a natural riparian area surrounding an old meander of the Verde River. This ancient world would have been familiar to the Sinagua, who used water from the marsh and the Verde River to irrigate their crops. Today, Tavasci Marsh has been designated an Audubon Society Important Birding Area for the number and diversity of biological species that inhabit the area.

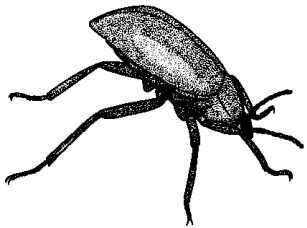


Today's Inhabitants

The ancient places of Montezuma Castle, Montezuma Well, and Tuzigoot may appear uninhabited at first glance—but they're not. Keep an eye out for these animals who live here today. Check off the ones you find.

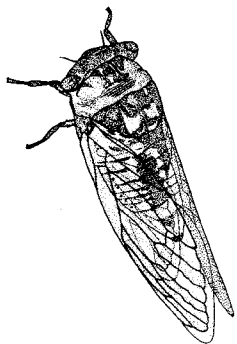
Pinacate Beetle □

Watch for one of these black insects to stand on its head if you approach. Also known as stink bugs, they pose this way when disturbed or threatened.



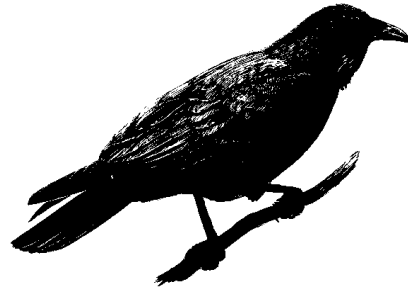
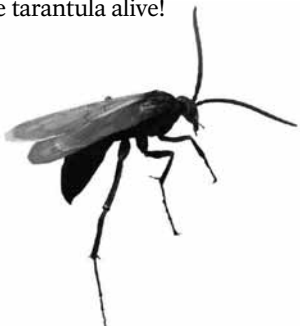
Cicada □

If you visit during the summer, you may hear high-pitched buzzing from the trees. That's the male cicada singing—and flexing his muscles—to attract a mate.



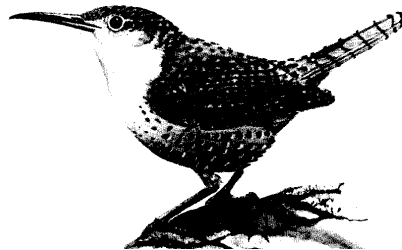
Tarantula Hawk □

These wasps are hard to miss—they are jet black and huge! Thankfully, they are surprisingly docile... unless you're a tarantula. A female tarantula hawk will sting these well-known spiders of the Southwest, but she won't immediately kill it. Instead, she drags it back to her nest and lays her eggs on the spider. When the wasp larvae hatch, they eat the tarantula alive!



Common Raven □

While this black bird resembles the American crow, the raven is much larger. Ravens feed on lizards, rodents, snakes, and carrion. These intelligent birds are the subject of stories and superstition in nearly every culture that encounters them.



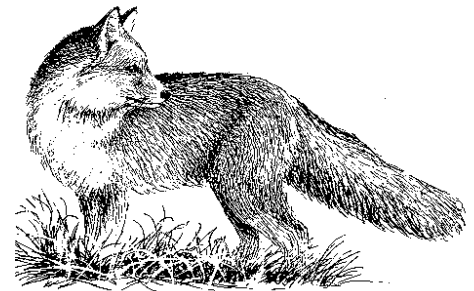
Canyon Wren □

"Tee-tee-tee-tee-tew-tew!" Clear, whistled notes descending like a waterfall of sound interrupt visitors' thoughts about the Sinagua culture's lifestyle. While gazing at the Castle, visitors hear these canyon wren calls. Its finely mottled brown body with a rust colored rump and tail is conspicuous as it flies to its nest inside a rock crevice. There it rests on the soft feather-lined nest made of twigs, leaves, and grasses.



Rock Squirrel □

Near Castle A, the loud shrill chirp of a rock squirrel alerts other animals of a nearby predator. Other rock squirrels and cliff chipmunks pause warily from their activities. While you may encounter a cute, furry squirrel begging for a treat, please do not feed them! These seemingly friendly squirrels often bite, and they can carry diseases including the plague. A diet consisting of native plants is healthiest for them.

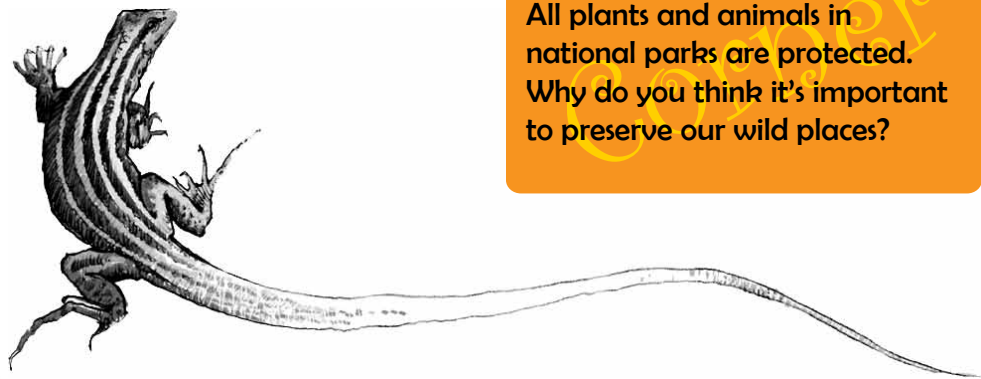


Gray Fox □

After exiting a den among the limestone cliffs, more gray-furred animals scurry across the limestone cliff. A black stripe extends the length of this mammal's tail. It is a female gray fox followed by four kits. She is teaching her young to hunt rodents, lizards, and insects. As omnivores, the gray fox also eats mesquite beans and berries. Canyons and rough country are ideal for dens and concealment from predators like the great horned owl. These small predators are the only members of the dog family that can climb trees, which they often do in search of bird eggs and nestlings.

Desert Grassland Whiptail □

Running among the creosote bushes and grass at the Castle is the desert grassland whiptail. She has 6 or 7 light stripes separated by dark bands and no spots. Desert grassland whiptails are all females and parthenogenic: there is no need to mate in order to reproduce. In fact, here are no males in the entire species!



There are lots of animals and plants that make their homes at Montezuma Castle, Montezuma Well, and Tuzigoot.

All plants and animals in national parks are protected. Why do you think it's important to preserve our wild places?

PARK SCIENCE AND OUTREACH

Kids Become Green Rangers

National Park Service teams up with local schools and communities to get youth outdoors

Hints of winter rustle the amber leaves that dangle from the trees at Montezuma Well. The mid-morning sun melts away last night's chill just in time for the first group of children arriving in the picnic area. Within ten minutes, expressions of astonishment, bursts of laughter, and the crunching of leaves overcome the murmuring irrigation canal and twittering rock wrens.

This time, the kids have spotted the remains of a crawdad anchored into the side of the canal. In the past they have darted around trees, searched for cicada shells, or hunted for the perfect piece of sycamore bark for the morning's mini-boat races. Over the next two hours, a troop of ten children scour the picnic area for trash, add wood chips to a new trail, investigate the tracks and scat of local wildlife, and demonstrate their nature knowledge in trivia games. These children carry with them not only the excited energy that accompanies outdoor explorations, but the honor of serving as park-certified Green Rangers.

Begun in September 2010, the Green Rangers program engages youth ages 8–12 with the local environment by offering free sessions to the Verde Valley community twice a month. Lessons on water quality, habitat restoration, native flora and fauna, traditional-

ly grown foods, and the prehistoric Sinagua allow the children to practice stewardship and volunteerism as they learn. Parents Julie and Jay Mills, who brought their two sons, express that the program offers them support. "We're trying to raise them to have a conscience about the planet," they said.

While these lessons about nature will hopefully become valuable, lifelong memories and tools the kids can continue to develop, the Green Rangers program hinges on learning through hands-on, field experience. Biologist and Outreach Coordinator Deborah DeCovis stresses the importance of engaging the children in safe, outdoor fun—something that moves the kids both physically and intellectually from the couch.

As a Student Conservation Association intern for the National Park Service, I have listened to countless knock-knock jokes and transformed into a human climbing post. I have become a rabbit, a leech, a wolf, and a flower on various Saturdays, all in the name of environmental education. These outdoor lessons seek to engage the whole of a child's universe—the wonder and humor, land and animals, technology and imagination. As always, the true values of education cannot be canned in a textbook, but instead stem from fluid engagement in the field.

Youth outreach field programs have been a recent emphasis for the natural resource staff at Montezuma Castle and Tuzigoot National Monuments. In the past year, Outreach Coordinator DeCovis has engaged over 1,000 students and parents in programs at Beaver Creek Elementary, Camp Verde High School, the Central Arizona Boys and Girls Club, and the Yavapai-Apache Nation. And she has created programs of her own, like the Green Rangers series.

Former Superintendent Kathy Davis, reflecting on her own childhood adventures in Nevada, commented that the Green Rangers program and other outreach ventures are a "personal growth experience for the kids that will hopefully last them a lifetime." And we hope it does—we hope the field lessons and games we play will sustain these young rangers as they navigate twenty-first century adolescence, swiftly advancing technologies, and a shrinking natural world. ♥

By Ryeon Corsi
Student Conservation Association

The Secret World of Rattlers

NPS and Northern Arizona University explore the fascinating lives of rattlesnakes

Yes, there are rattlesnakes in the Verde Valley. At Montezuma Castle and Tuzigoot, many have been the subjects of a long-term research project conducted by Dr. Erika Nowak of Northern Arizona University. By capturing, releasing, and tracking individual snakes for nearly two decades, Dr. Nowak's study has furthered our understanding of these secretive and amazing creatures.

It's unlikely, but one may see a rattlesnake here any time of year. A valuable component of the southwestern environment, they play a vital role in controlling rodent populations. Their venom is primarily for killing and digesting prey, so they are not eager to bite people. They avoid predators, including us, using camouflage—if the snake can evade detection, it can save its venom for hunting.

While rattlesnakes can be dangerous, it is possible to have an enriching encounter with this iconic symbol of the desert. Here are some tips to make your next sighting memorable for all the right reasons:

- Treat the snake with respect. Do not throw rocks or poke it with a stick.
- Give it some space. About six feet (two meters) is the minimum for safety.
- If a snake wants to retreat, don't chase it.
- If you hear a rattle but do not see the snake, do not back up. Turn around and calmly walk forward in the direction from which you came. You don't want to trip and fall on a rattlesnake because you couldn't see where you were going.
- Always photograph and observe rattlesnakes from a safe distance.

As a general rule in the desert, remember to never put your hands, feet, or behind anywhere your eyes have not been first. If you are ever bitten by a snake, do not attempt to treat yourself. Many folk remedies do more damage than good. Call 911, and go to the hospital immediately.

Finally, if you find a rattlesnake on park trails, note its location and report the sighting to a ranger as soon as possible. Rangers are trained to capture and relocate rattlesnakes in a way that is safe for them and the public. ♥

By Ryan Isaac
National Park Service

Exotic Plant Round-Up

Quick, name a familiar symbol of the American southwest!

Some imagine wild mustangs in wide, open spaces. Others picture the sun-bleached cow skulls and crimson sunsets of a Georgia O'Keeffe painting. Perhaps you think of a rugged cowboy, or a skeletal tumbleweed bouncing aimlessly over a parched plain.

Actually, it ought to be said that tumbleweeds "ain't from around here." Did you know this long-standing avatar of America's deserts comes from Eurasia? That's right: the famous tumbleweed is also known as Russian thistle. When one breaks loose and bounces across the desert, every brush with another object jostles loose more seeds—up to 200,000 of them!—spreading this invasive homesteader far and wide.

Unfortunately, tumbleweed isn't the only invasive plant at Montezuma Castle and Tuzigoot National Monuments. There are also fireweed, cheatgrass, London rocket, and many others! This posse of plants claim squatters' rights by spreading and growing so quickly that native plants can't compete and are sometimes pushed right off the land. When that happens, the effects can ripple throughout the entire ecological community, from plants to plant-eaters, all the way up to predators like coyotes, bobcats, and pumas.

As part of its mission to preserve America's outdoor heritage, the National Park Service is working to reduce the spread of invasive plants and maintain the health of natural areas in the parks. During your visit to Montezuma Castle and Tuzigoot National Monuments, you may see this science in action. In 2010 park biologists and volunteers began restoring native grasses and shrubs along the trail at Montezuma Castle. Staff at Montezuma Well are already in the fifth year of a project to restore habitat on historic farms along Wet Beaver Creek. At Tuzigoot biologists are developing strategies to control fireweed around the perimeter of Tavasci marsh.

Invasive exotic plants represent one of the most significant threats to natural resources in national parks. However, the science you see today helps us gather new information, detect and control the invasive plants, and develop long-term policies to send these bad guys into the sunset. ♥

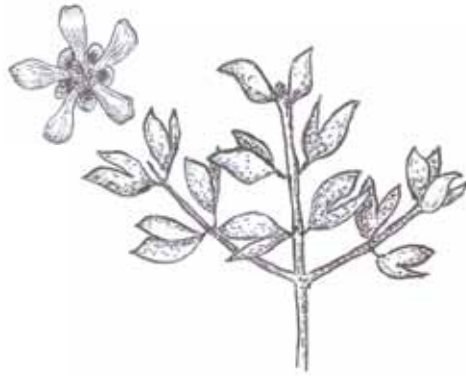
By Case Griffing
National Park Service

Desert Plants are Foundations of Life

The people of the Verde Valley have lived close to the land for over 10,000 years, from the earliest Paleo-Indians to the farming Sinagua to the hunter-gatherer Yavapai and Apache. These plants provided food, medicine, and more.

Creosote Bush □

Some creosote plants are believed to be more than 11,000 years old! Humans have used creosote for a variety of ailments—so many, in fact, that the species has been nicknamed the pharmacy of the desert. It has antibacterial, antifungal, and anti-inflammatory properties and has been used to treat everything from foot odor and bad breath to colds, kidney stones, asthma, and diabetes. Its pitch was also used by Native people, as a water-tight sealant for baskets.



Four-Winged Saltbush □

Another plant that is being explored today as a treatment for diabetes, Native groups used various parts of the plants. A poultice of fresh or dried flowers was used for ant bites. The seeds were eaten as food, and the plant's ashes were used in place of baking soda. If you look closely at the plant's seeds, you'll see where it gets its name—four, paper-like wings extending from a central pod.

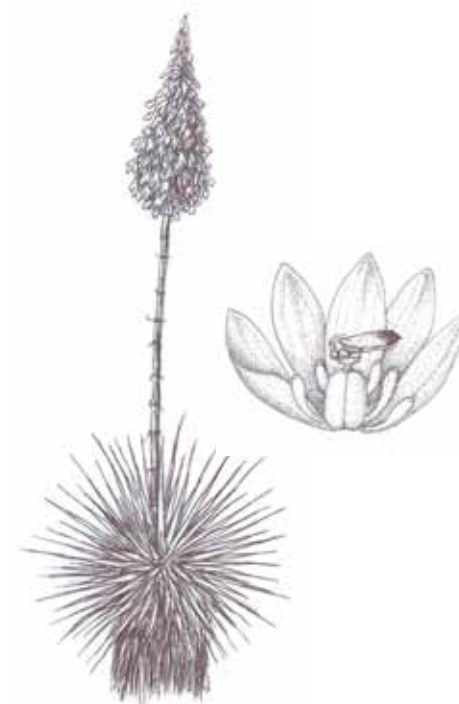


Soaptree Yucca □

When boiled, the roots of this tall plant create suds and can be used as soap. However, the soaptree had other uses, as well. The blossoms and stems were used for food, while different groups used the stiff, fibrous leaves for making rope and basketry.

Banana Yucca □

The sword-like leaves of this species are much stiffer than those in the Soaptree Yucca above. However, like that plant, the spines can be turned into strong cordage. In late spring, its flowers turn into banana-shaped fruits. These could be eaten raw or mashed into a pulp, formed into cakes, and stored for later consumption.



Cattail □

You might not expect to find this water-loving plant in Arizona, but it thrives at Tavaschi Marsh! Tribes affiliated with Montezuma Castle and Tuzigoot still return here to collect its pollen for ceremonial uses.



“What’s That Tree With the White Bark?”

The Arizona Sycamore is a Highlight of Any Visit

Mostly white trunks and spreading, gnarled branches rise in stark contrast to the vivid hues of green along the riparian, or streamside, areas of the Verde Valley. The Arizona Sycamore, often reaching heights of 80 feet (24 m), is one of the most distinctive sights at Montezuma Castle and Montezuma Well. This member of the plane tree family once blanketed Arizona, 63 million years ago when the climate was cool and moist. As the weather became drier, these deciduous trees retreated to areas close to permanent water, such as the perennial riverways and canyon bottoms that bisect the state.

Some amazing adaptations help the Arizona Sycamore survive from seedling to old age, at least 200 years. Each fruit pod contains an average of 667 seeds with a protective coating designed to withstand seasonal flooding, torrents of water that reshape the land and move huge masses of rocks, earth, and debris.

The roots of the young plant must be able to penetrate the rock-laden, compacted substrate. If torrential flooding scours the area, the seedlings may be left literally high and dry, with roots that have to remain in moist soil to thrive. Once established, the trees help protect against erosion, capturing precious topsoil for other plant life.

The sycamore hosts a myriad of species native to Arizona. Large, palm-shaped leaves protect and shelter the many small birds using the waterways as a migration corridor. Woodpeckers and other burrowing animals nest in its spreading branches, and insects go through various life stages as they become sustenance for even more creatures. In the hot, dry summer months, sycamores offer shade and relief to all life along the banks.

People in the Verde Valley have used the soft wood of the Arizona Sycamore for thousands of years. The ancient Sinagua used these trees for many of the support beams still visible in Montezuma Castle. Some of these beams, which were hoisted 80 feet above the valley floor, are estimated to weigh over two tons!

Montezuma Castle National Monument is one of the best locations to view Arizona Sycamore in its natural state. Sadly, over 90 percent of Arizona's riparian areas, habitat necessary for the survival of these glorious trees, have been lost to development or are not accessible to the general public.

Montezuma Well features a large, curved sycamore along the Outlet Trail, unchanged since it was photographed in the 1870s. This tree stands as a relic of the distant past and continues to inspire awe in visitors today. ♥

By Anne Worthington
National Park Service

Where do you go when you get sick? First, you probably tell a grown-up. They take you to the doctor, and then it's off to the store for medicine.

Sometimes kids who lived here got sick, too. Just like you, adults took their children to someone who knew about medicine. But here, they couldn't buy it at the store. Instead, medicine came from plants! Which do you think tastes better—creosote or cough syrup?

LOCAL FRIENDS & PARTNERS

YAVAPAI-APACHE NATION



Yavapai-Apache Tourism Department

Information on activities through the Yavapai-Apache Nation.

ADDRESS: 353 West Middle Verde Road,
Camp Verde, AZ 86322

PHONE: (928) 567-1004

WEB: www.yavapai-apache.org

CHAMBERS OF COMMERCE

Camp Verde Chamber of Commerce

385 South Main, Camp Verde, AZ 86322
(928) 567-9294

WEB: www.visitcampverde.com

Clarkdale Chamber of Commerce

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(928) 634-9438

WEB: www.clarkdalechamber.com

Cottonwood Chamber of Commerce

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(928) 634-7593

WEB: www.cottonwoodchamberaz.org

Jerome Chamber of Commerce

P.O. Box K, Jerome, AZ 86331
(928) 634-2900

WEB: www.jeromechamber.com

Sedona-Oak Creek Chamber of Commerce

331 Forest Road, Sedona, AZ 86339
(800) 288-7336

WEB: www.sedonachamber.com

HISTORICAL SOCIETIES & MUSEUMS

Camp Verde Historical Society and Museum

PHONE: (928) 567-9560

Sedona Historical Society & Heritage Museum

PHONE: (928) 282-7038

WEB: www.sedonamuseum.org

Clemenceau Heritage Museum

PHONE: (928) 634-2868

WEB: www.clemenceaumuseum.org

Clarkdale Heritage Museum

PHONE: (928) 649-1198

WEB: www.clarkdaleheritage.org

ARIZONA STATE PARKS

Website for all Arizona State Parks:
www.azstateparks.com

Dead Horse Ranch State Park

Located on the Verde River near Cottonwood. An excellent place for bird watching and hiking along the Verde River. Offers picnicking, full-facility camping, fishing, horseback riding, and mountain biking.

HOURS: Ranger Station 8 a.m. to 5 p.m. daily

ADDRESS: 675 Dead Horse Ranch Road,
Cottonwood, AZ 86326

ADMISSION: \$7 per vehicle (1-4 adults) or \$3 per individual.

PHONE: (928) 634-5283

Jerome State Historic Park

Jerome's modern history began in 1876 when three prospectors staked claims on rich copper deposits. By the early 20th century, Jerome was home to the largest producing copper mine in Arizona territory. Visitors can tour parts of the 1916 James S. Douglas mansion and view outdoor mining exhibits. A picnic area is available, and leashed pets are permitted outside. Call for details.

HOURS: 8:30 a.m. to 5 p.m. daily; closed

Christmas Day

ADDRESS: 100 Douglas Road, Jerome, AZ 86331

ADMISSION: \$5 for ages 14 and up, \$2 for ages 7-13, free for ages 6 and below.

PHONE: (928) 634-5381

Slide Rock State Park

This park in scenic Oak Creek Canyon takes its name from the 30-foot water slide naturally worn into the rocks of the creek bed. There are opportunities for bird watching, fishing, hiking, and relaxing along the creek. Pets are allowed on leash in most areas of the park, but not in the swimming areas.

HOURS: Day use only. Summer hours 8 a.m. to 7 p.m. No entry permitted after 6 p.m.

ADDRESS: 6871 North Highway 89A,
Sedona, AZ 86336 (in Oak Creek Canyon).

ADMISSION: \$20 per vehicle (1-4 adults)

Memorial Day through Labor Day.

Otherwise \$10 per vehicle (1-4 adults). \$3 per individual.

PHONE: (928) 282-3034

Red Rock State Park

A nature preserve and environmental education center just a few miles south of Sedona. The picnic area and classrooms may be reserved for public or private functions. Designated hiking trails are available, but there is no swimming, wading, or camping. Pets are not allowed in the park. There are many nature hikes, talks, and programs for children. Call for details.

HOURS: 8 a.m. to 5 p.m. daily.

ADDRESS: 4050 Red Rock Loop Road, Sedona,
AZ 86339

ADMISSION: \$10 per vehicle (1-4 adults) or \$3 per individual.

PHONE: (928) 282-6907



Fort Verde State Historic Park

General George Crook's U.S. Army scouts and soldiers were stationed at Fort Verde in the late 1800s. Several original buildings still exist. Historic military living quarters are open to visitors and teach about life on the frontier. The museum located in the old headquarters buildings displays artifacts explaining the history and methods of frontier soldiering.

HOURS: 9 a.m. to 5 p.m. Thurs-Mon; closed

Tuesdays, Wednesdays, and Christmas

ADDRESS: 125 East Hollamon Street, Camp
Verde, AZ 86322

ADMISSION: \$5 for ages 14 and up, \$2 for ages 7-13, free for ages 6 and below.

PHONE: (928) 567-3275



ARIZONA GAME AND FISH

Page Springs Hatchery

Arizona's largest fish hatchery. A self-guided tour takes visitors through the main hatchery where rainbow and brown trout are raised to be released in waters throughout Arizona. There are two additional nature trails, including a walk along Oak Creek. The Page Springs Hatchery is also an Audubon-designated Important Bird Area. Sightings of bald eagles are common in winter months.

HOURS: 8 a.m. to 4:00 p.m. daily; closed

Thanksgiving and Christmas Day

ADDRESS: 1600 North Page Springs Road,
Cornville, AZ 86325

ADMISSION: no charge

PHONE: (928) 634-4805

U.S. FOREST SERVICE



Palatki Heritage Site

Cliff dwelling and pictograph trail interpreting the prehistoric Sinagua culture. Reservations are required because the parking lot only has 16 spaces.

HOURS: 9:30 a.m. to 3 p.m. daily; closed

Thanksgiving and Christmas Day

ADMISSION: fee; Red Rock, Interagency Annual,
Senior, or Access passes accepted.

PHONE: (928) 282-3854

Honanki Heritage Site

Cliff dwelling with associated rock art, interpreting the prehistoric Sinagua culture.

HOURS: 9:30 a.m. to 3 p.m. daily; closed

Thanksgiving and Christmas Day

ADMISSION: fee; Red Rock, Interagency Annual,
Senior, or Access passes accepted.

PHONE: (928) 300-8886

V-V Heritage Site

Rock art site highlighting over 1200 petroglyphs. There is a small visitor center and gift store.

HOURS: 9:30 a.m. to 3 p.m. daily; open

Friday-Monday; closed Thanksgiving and
Christmas Day

ADMISSION: fee; Red Rock, Interagency Annual,
Senior, or Access passes accepted.

PHONE: (928) 282-3854

Burning Questions

Montezuma Castle is five stories tall, has 20 rooms, and covers 3,500 square feet (325 m²) of floor space. Its alcove is about 35 feet (10.7 m) deep.

Q: Who lived at the Castle, the Well, and Tuzigoot?

A: Archeologists call them the Sinagua culture, but we don't know what they called themselves. They built more than 40 pueblos and hamlets throughout the Verde Valley.

Q: How did people get into Montezuma Castle?

A: They used ladders, just like park rangers do today. While ours are made of aluminum, they made theirs with wood and tied them together with yucca fiber.



Q: When did the Native Americans abandon these places?

A: They didn't! Though they did move to other villages by 1425, their descendants still come back here. To them, these places are alive and important even after all this time.

Q: Where did they go?

A: Many people in the Verde Valley migrated to other places. They became some of the ancestors of today's Hopi and Zuni people. A few stayed and lived as hunters and gatherers. Their descendants are today's Yavapai.

Montezuma Well contains enough water to fill 20 Olympic-sized swimming pools. It is more than 55 feet (16.75 m) from the surface to the false bottom—and an unknown distance from there to the real bottom.



Tuzigoot is made up of 110 rooms. Before the Great Depression, the collapsed pueblo was covered in debris. Local men and women in need of work were hired to excavate the rooms and clean the artifacts, many of which are on display in the museum there today.

Q: How old are these buildings?

A: The oldest rooms at Tuzigoot had been started by 1000 CE. Montezuma Castle was probably started in the 1100s. The last occupants of these pueblos had moved away by 1425.

Q: Is it worth five dollars?

A: We think so! These monuments and their stories are part of our national identity. Montezuma Castle and Tuzigoot represent some of the best examples of Native American architecture anywhere in the Southwest.

Your investment helps maintain trails, create exhibits, educate school groups, and complete many important projects!

WESTERN NATIONAL PARKS ASSOCIATION

Western National Parks Association was founded in 1938 to aid and promote the educational and scientific activities of the National Park Service. As a nonprofit organization authorized by Congress, we operate visitor center bookstores, produce publications, and support educational programs at more than 66 parks throughout the western United States.

Bookstore Sales

Bookstore sales are WNPAs primary source of income, and this income is used to support National Park Service interpretive programs. The following publications, available from WNPA, are recommended for making the most of your visit to the Verde Valley national monuments in central Arizona.

For our full catalog, stop by our visitor center bookstore, or browse online at www.wnpa.org.

Montezuma Castle & Tuzigoot

The People of Montezuma Castle and the Verde Valley

Mary Ontiveros

The Sinagua culture thrived in the Verde Valley of Arizona for nearly eight centuries. This book gives readers a closer look at the people who lived there for generations: how they farmed, traded, and constructed the multi-story dwelling explorers named Montezuma Castle. 20 pages. Full color, 6"x9". \$2.00

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This is your personal guide to the Southwest and the many opportunities for discovery in its national parks. 88 pages. \$14.95

Montezuma Castle National Monument
Susan Lamb

This book presents an overview of the early human history at Montezuma Castle National Monument, including Montezuma Well. 16 pages, \$4.95.

Tuzigoot National Monument
Rose Houk

This book presents an overview of the early human history at Tuzigoot National Monument. 16 pages. \$3.95

Ruins Along The River
Carle Hodge

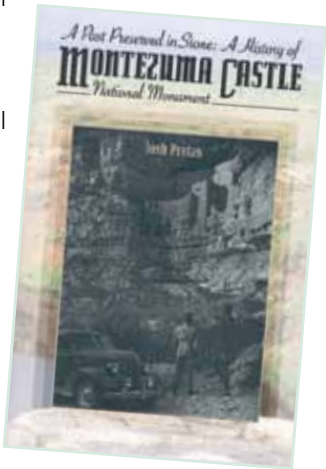
A study of the Sinagua culture in the Verde Valley. Includes Montezuma Castle National Monument, including the Montezuma Well Unit, and Tuzigoot National Monument. Also mentioned are Fort Verde, Jerome, Sedona, and the Flagstaff area national monuments. 48 pages. \$3.95

Monuments In Depth

A Past Preserved in Stone: A History of Montezuma Castle National Monument

Josh Protas

An in-depth administrative history of Montezuma Castle National Monument, including Montezuma Well. Contains historic photographs. 256 pages. \$21.95



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Those who Came Before: Southwestern Archeology in the National Park System
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